II PU BIOLOGY (36)
SCIENCE ENTRANCE ACADEMY
PREPARATORY EXAMINATION -IV

DATE: 23-11-2019 **MAX. MARKS: 100**
ROLL NO. _____ **TIME: 3.00 hours**

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Note:

1. **Answer all the questions.**
2. **Draw diagrams wherever necessary. Unlabeled diagrams do not attract any marks**

PART- A

I. Answer ALL the questions. Each carries ONE mark. (10X1= 10)

1. Define eutrophication
2. Name the type of immunity which is responsible for the graft rejection.
3. What is down streaming process?
4. State Allen's rule
5. Define Biomagnification
6. Name the cells that secrete androgens.
7. Off springs of asexual reproduction are called clones. Why?
8. What does pollen grain represent?
9. What is the contribution of Stanley Cohen and Herbert Boyer to the field of biotechnology?
10. What is urethral meatus?

PART- B

II. Answer ALL the questions. Each carries TWO marks (8X2=16)

11. Define spermiation. What is the role of FSH in spermiogenisis?
12. Explain the procedures involved in GIFT and Intra Cytoplasmic Sperm Injection.
13. Mention the functions of β-galactosidase and permease in lactose metabolism in *E. coli*.
14. What is interspecific hybridization? Give suitable example.
15. Distinguish between Grazing food chain and Detritus food chain.
16. Write the major problems in completing the biological wealth inventory of India.
17. Name the primates that lived 15 million years ago. Mention any two of their characteristics.
18. Why is the introduction of genetically engineered lymphocytes into a ADA deficiency patient not a permanent cure? Suggest a possible permanent cure.

PART- C

III. Answer ALL the questions. Each carries THREE marks (8X3=24)

19. "There is a great need to conserve biodiversity". Justify with six reasons.
20. Mention three advantages offered by the seeds to angiosperms
21. What is noise? Mention four effects of noise pollution in humans.
22. Mention the three basic steps in genetically modifying an organism.
23. What is asexual reproduction? Explain encystation and sporulation in *Amoeba*

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24. Mention the names of three drugs which are commonly abused and write the binomial name of the plants from which these drugs are extracted.
25. What is pedigree analysis? Write the representative pedigree analysis (pedigree chart) of myotonic dystrophy as an example for autosomal dominant trait.
26. Mention the microbial source (scientific name) and the function of streptokinase, cyclosporin A and statin.

PART- D

IV. Answer any FIVE questions. Each carries FIVE marks (5X5=25)

27. (i)Mention any three characteristic features of flowers that are pollinated by animals.(3)
    (ii) Give the definitions of the following:
    (a) Perisperm (b) Parthenocarpic fruits (2)
28. State the law of Independent assortment. Explain it with reference to the inheritance of colour and shape of the seed in pea plant.
29. What is genetic code? Explain any four salient features of genetic code.
30. Explain oogenesis with the help of a schematic representation.
31. (i)How paleontological evidences have helped in understanding the evolution of life forms? (3)
    (ii) What is divergent evolution? Mention an example in plants and animals. (2)
32. (i)Explain the procedure of developing nematode resistant tobacco plant by RNA interference.(3)
    (ii) What is biopiracy? Explain it with respect to Basmati rice.

PART- E

V. Answer ALL the questions. Each carries FIVE marks (5X5=25)

33. (i) Mention the measures to be taken to realize the yield potential in cattle in a dairy farm.(3)
    (ii) Write any four traits for which plant breeding is done. (2)
34. Define homeostasis. Describe how organisms cope with stressful conditions in their habitat.
35. (i)What are antibiotics? Write a note on discovery of antibiotics. Who has developed the potential antibiotic? (3)
    (ii) Write any two uses of LAB other than its role in converting milk into curd. (2)
36. Define ecological succession. Differentiate primary and secondary ecological successions. Why the rate of primary succession is slower but that of secondary succession is faster?
37. Explain the types of cancer, causes ,detection, diagnosis and treatment of cancer.

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